SEVENTH-GRADE MANUAL TRAINING

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The central thought in planning the shop-work for the seventh grade this year was to get something around which as many as possible of the other subjects of study could be grouped naturally. The incubator and brooder were chosen because of the interest the pupils had in them; because of their close relation to the agriculture, geography, arithmetic, and composition then being studied; and because of the season—late winter, when the subject of chicken-raising suggests itself naturally.

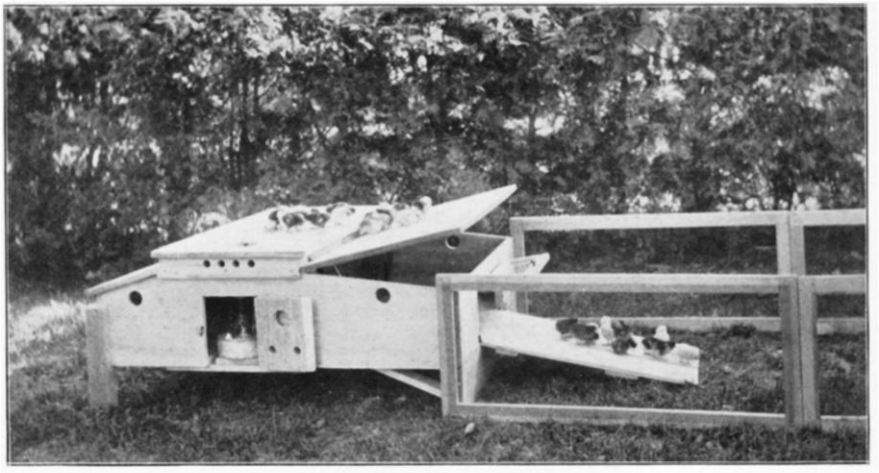
Various styles of incubators and brooders were examined and studied. The ones best adapted to good work in the shop and easy to manipulate were selected. Plans were drawn, and specifications for lumber in the rough were made. The various pieces were cut to dimensions and assembled.

The work in agriculture, composition, etc., was done by practice-teachers under the direction of Miss Jessie Montgomery, principal of the grammar department.

The composition, following the outline used in the shop-work, was written by Archie Brugger, and chosen because it gives some idea of the knowledge the children gained about incubation and the raising of poultry.

Topics discussed in the shop:

1. Discussion of poultry-raising.
   - *a*) Natural and artificial incubation.
   - *b*) Profit.
   - *c*) Good work for boys and girls.
2. Incubator.
   - *a*) Selection of style; method of heating and ventilating; regulating temperature and moisture.
   - *b*) Drawing plans and making bills for materials.
   - *c*) Building: getting parts to dimensions, assembling and testing.



SPECIMENS OF WORK IN MANUAL TRAINING, SEVENTH GRADE

3. Operating incubator.
   a) Leveling apparatus.
   b) Quantity of water in tank; why tank cannot be filled.
   c) Lamp: filling; kind of oil; trimming; regulating.
   d) Regulating temperature: degree of heat; location of thermometer; dampers; adjusting regulator; time to run incubator before putting in the eggs.
   e) Care of eggs: turning; reasons for; method of; when to begin; how often; when to cease; time used.
   f) Moisture.
   g) Ventilation: at beginning of hatch; after forty-eight hours; during hatch; at time of hatch.
4. Selecting eggs.
   a) Defects: very large very small; poor shape; rough shell.
   b) Age: should be fresh.
   c) Care of, while in storage: temperature should be even and cool; should be turned once in twenty-four hours.
5. Brooder.
   a) Selection of style: hot-air and hot-water heating; ventilation; temperature; kinds of hover and runs.
   b) Drawing plans, and making bills for material.
   c) Building: getting parts to dimensions, assembling and testing.
6. Operating brooder.
   a) Filling tank; care of lamp.
   b) Temperature: during first four days; after first four days.
   c) Floor covering and food while in brooder.
   d) When to transfer chicks to coops.

AN EXPERIMENT IN INCUBATION

In the early part of our course in manual training the seventh grade decided to make an incubator and brooder, in connection with our course in agriculture. The incubator is heated with hot water and has a capacity for two hundred eggs. After it was completed, we spent a week in testing and regulating the heating apparatus. We found that it would keep regularly the required temperature of 103 to 104 degrees. We purchased seven

dozen eggs—two dozen Plymouth Rock, two dozen Black Minorca, and three dozen Brahma eggs.

Before we put the eggs into the incubator we tested them with an egg-tester to separate the bad from the good. Each egg was held before the flame of a lamp, and if it were dark it was bad. Then we placed the good eggs in the incubator on the thirteenth of March.

After the third day the eggs were turned and aired daily. About a week or ten days after they were placed in the incubator they were tested again to see if they were good for hatching.

When the chickens began to hatch on the third of April, we moved the incubator and brooder into the main room, because the shop was so small we did not have room in there. There were thirty-seven chickens hatched; seven of them died, but the remainder were healthy chicks. When they were about a day old, they were transferred to the brooder, which was heated by hot water and kept at a temperature of about 80 or 85 degrees. A hover which was made of felt was hung in the brooder, and the floor was covered with chaff for the chickens to scratch in.

The chickens were left in the brooder a day or so without being fed. Then we fed them baked corn which we crumbled up for them, and sometimes we gave them bread which we had soaked in water.

By this time the chicks became so noisy that they interfered with our studying, so we made a run for them in the basement. They were finally bought by a lady who wanted to have some early chickens.

As the incubator and brooder proved to be a success, we sold them to a friend who was interested in raising chickens.

ARCHIE BRUGGER.